



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,514	02/10/2004	Pie-Yau Chien	MR929-959	8695

4586 7590 07/12/2005

ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER

OSELE, MARK A

ART UNIT	PAPER NUMBER
----------	--------------

1734

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,514

Applicant(s)

CHIEN ET AL.

Examiner

Mark A. Osele

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzone et al. in view of the admitted prior art. Conzone et al. teaches the method of bonding flat glasses with good optical clarity (column 1, lines 15-22) by obtaining flat glasses (column 5, lines 7-15), cleaning the bonding surfaced using an ultrasonic solution (column 5, lines 16-39) followed by a volatile solvent to clean and dry the glasses (column 5, lines 43-46), removing particles with a CO₂ gun (column 5, line 47) placing the cleaned surfaces together, and bonding them using heat and pressure (column 7, lines 1-15). It is noted that the instant claims do not prohibit the use of a liquid layer between the flat glasses. Conzone et al. fails to show the surface precision or a clamp.

Conzone et al. teaches the use of pressure to bond the glasses together. Clamps are conventional devices for applying pressure to objects being bonded. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a clamp in the method of Conzone et al. because clamps are readily obtainable, inexpensive, and conventionally used to apply pressure during lamination.

The admitted prior art teaches that flat glasses to be bonded together typically have a surface precision of $\frac{1}{4} \lambda$ (instant specification page 1, line 21 to column 2, line 6). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the glasses of Conzone et al. with a surface precision less than $\frac{1}{2} \lambda$ because the admitted prior art teaches that this is necessary for bonding flat glasses with a liquid layer therebetween.

3. Claims 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzone et al. in view of the admitted prior art as applied to claims 1, 2, and 4 above, and further in view of Peterman, Sr. and Ina et al. Peterman, Sr. teaches that after cleaning surfaces to be bonded, the surfaces should be visually inspected with scanning equipment to ensure that particles which would inhibit bonding are not present on the surfaces (paragraph 1, lines 13-65; paragraph 2, lines 1-7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use equipment for detecting particles remaining on the surface of the glasses of the method of the references as combined because Conzone et al. and Peterman, Sr. each show that particles interfere with bonding and Peterman, Sr. shows a system for detecting these deleterious particles.

Ina et al. teaches that interferometer equipment can detect harmful particles on clean, flat surface (column 1, lines 8-21; column 10, 53-60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the interferometer equipment of Ina et al. in the method of the references as combined

Art Unit: 1734

because Ina et al. shows that this equipment is commercially available for detecting particles which would interfere with article processing.

4. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzone et al. in view of the admitted prior art, Peterman, Sr. and Ina et al. as applied to claims 3 and 7 above, and further in view of Gwo. Gwo teaches that prior to bonding, particles on a surface can be removed with a CO₂ gun or deionized-air cleaning (column 6, lines 42-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the CO₂ gun of the method of the references as coming with a deionized-air cleaning system because Gwo teaches that these can be used interchangeably or together for particle removal.

5. Claims 6 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzone et al. in view of the admitted prior art, Peterman, Sr., Ina et al., and Gwo as applied to claims 5 and 9 above, and further in view of Meissner. Meissner teaches that heat treating for bonding can be as low as 100°C for plastics or higher, which creates a stronger bond, when combining glasses (column 12, lines 49-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a bonding temperature within the instantly claimed range because Meissner shows that temperatures within this range are chosen dependent upon the materials being bonded and the strength of bond required.

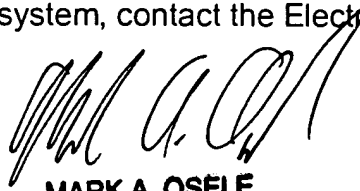
Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Meissner et al. and Nishimoto et al. each show bonding methods for flat articles. Klooster et al. teaches that interferometers are known for detecting particles on surfaces.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Osele whose telephone number is 571-272-1235. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARK A. OSELE
PRIMARY EXAMINER

July 8, 2005